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London

1857

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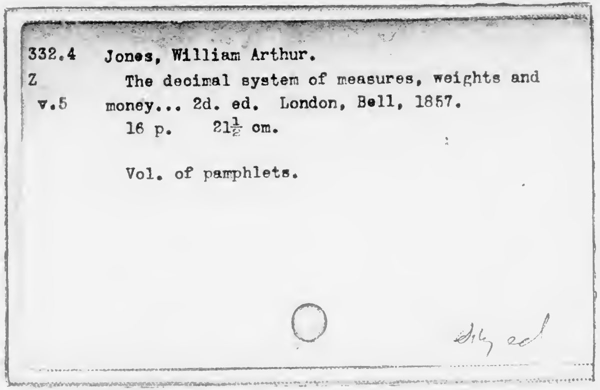

332.4 Jones, William Arthur.
Z The decimal system of measures, weights and
v.5 money... 2d. ed. London, Bell, 1857.
16 p. 21½ cm.

Vol. of pamphlets.

Sily ed

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TECHNICAL MICROFORM DATA

FILM SIZE: 35mm

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THE

DECIMAL SYSTEM

OF

MEASURES, WEIGHTS, AND MONEY.

BY
WILLIAM ARTHUR JONES, M.A.,
CORRESPONDING MEMBER OF THE INTERNATIONAL ASSOCIATION FOR
OBTAINING A UNIFORM DECIMAL SYSTEM OF MEASURES,
WEIGHTS, AND COINS.

SECOND EDITION.

LONDON:
SOLD AT THE OFFICE OF THE INTERNATIONAL ASSOCIATION,
11, BUCKINGHAM STREET, ADELPHI;
AND BY
BELL AND DALDY, 186, FLEET STREET.

1857.
PRICE 6*d.*, OR 25*s.* PER HUNDRED.

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ADVERTISEMENT.

The following Essay originally appeared in four successive numbers of the Taunton Courier. A few additions and alterations have been made, but the original arrangement has been preserved. It is republished in its present form at the suggestion of some of the Officers of the International Association for obtaining a Uniform Decimal System of Measures, Weights, and Coins.

Taunton, *April 15th*, 1857.

HACKNEY:
PRINTED BY CHARLES GREEN.

THE DECIMAL SYSTEM
OF
MEASURES, WEIGHTS, AND MONEY.

"For goodness sake! don't make us keep our accounts in decimals. It is hard enough to keep them square as it is. It will be impossible then." Much in this way have we usually been assailed when advocating the adoption of the Decimal System in Measures, Weights, and Coins: and our answer has invariably been, "We admit to the fullest extent the difficulties and perplexities attending the present system, and it is simply on that account we desire to see introduced a new system, which will be as simple as the old is complex, as easy as the old is difficult."

If our readers will do us the favour to give us their company while we perform a few simple arithmetical calculations with a view to explain and illustrate this subject, we believe they will, without hesitation, admit not only that the Decimal System is easy and simple in itself, but that its adoption in this country would be an incalculable advantage. We have always found that all the opposition, uttered or felt, has originated in a complete misapprehension of the nature and character of the system proposed. The grim forms of mysterious rules, relating to certain incomprehensible Decimal fractions, have sprung up from the half-forgotten experience of early school-life, to surround this subject with difficulties which do not exist. In fact, the difficulties apprehended belong to the system now in use, not to that which it is proposed to substitute for it. When the present complicated system is superseded by the simple and uniform arrangements of the Decimal plan, our schoolmasters will find arithmetic to be one of their easiest departments, instead of being, as it now is, the most perplexing. A whole host of rules and arithmetical operations, which (as the recollection of every one of our readers, we feel assured, will testify) are a sore trial to the school-boy, will be swept clear away from our "Tutor's Assistant;" and the time and labour thrown away upon needless difficulties will be devoted to further progress in the principles of arithmetical computation, which very few, comparatively, are now enabled to acquire. When our readers have made themselves acquainted with the main features of the system proposed to be introduced, they will see that the Rules known as Reduction, and as Compound Addition, Subtraction, Multiplication, and Division, no longer exist. Even the most ordinary arithmetical genius, barely outside the bounds of Duncedom, need no longer exclaim,

> "Rule of Three does puzzle me,
> And Practice drives me mad:"

for by the Decimal System, the former becomes *really* Simple Proportion, and the latter disappears altogether from among the operations of arithmetical calculation.

On the present occasion we propose to treat of this important subject in such a style as may not only enable, but we hope induce, our younger readers to accompany us in the investigation, and to enlist their aid in effecting the change which we confess ourselves extremely desirous of seeing accomplished in this country within a few years. We are confident it must come—and that very soon: so soon that we have half resolved to keep back some half-a-dozen olive-branches, budding around us, from blossoming in the arithmetical department, until they may be permitted to bloom freely in the only truly natural atmosphere of a Decimal System. But we hasten to explain the leading feature of the system. It is simply this: Each principal coin, and each principal measure of length, capacity, and weight, is *ten times* greater than that below it:* whatever unit or standard we adopt, each member of the series is a multiple of *ten.* Our young Latin scholars will observe, that our system is hence called *decimal,* from the Latin *decem,* ten.

This feature is not so novel, by any means, as to justify the fears and apprehensions sometimes expressed on this scheme. In the first place, we always carry about us, every man, woman and child, a complete *decimal machine.* What are our *ten* toes, our *ten* fingers, our *digits,* but a natural index to the number which should lie at the foundation of our arithmetical computation? The learned Arabs were not unmindful of the significance which attached to this arrangement of the human digits, and thereupon they constructed that beautiful scheme of notation, which is now in use among all civilized nations. The Arabic system of notation is purely decimal. The symbols or signs of number increase just *ten* times in value,

---

* By *principal* coins are meant *moneys of account.* For convenience of traffic, intermediate coins and weights will of course be required. These will be either half or twice those above and below them.

according to the position they occupy, ranging from right to left. Thus in 33333, the first figure 3, on the right hand, stands for 3 ones; the second 3 for *ten times* 3, or 30; the third 3 for *ten times* 30, or 300, and so on—each member of the series increasing in value *ten-fold.*

The substitution of the Arabic system of notation for the very cumbrous and unwieldy systems in use among the Greeks and Romans, was of incalculable advantage, and greatly aided the progress of arithmetic. This any one will readily understand, who attempts to cast up accounts as they stand in ancient records, or essays to perform even the simplest operations of arithmetical computation with the Roman numerals. Thus, to multiply MDCCCCXCIX by MDCCCXLVIII, or to divide MDCCCXCVII by XLIX, is a much more difficult task than to multiply 1999 by 1848, or to divide 1897 by 49. The advantages of the present system of notation are due solely to the *Decimal* arrangement upon which it is founded; and it is obvious these advantages would be greatly increased if the principle were still further carried out. This is what the advocates of the Decimal System contend for: they simply desire to apply to our Measures, Weights, and Money, the same principle of multiplication and division by *ten.* As far as regards Money, it is still a question among them what unit to adopt, whether the pound, the franc, or some other. We shall have a few words to say on that subject before we have done; but without committing ourselves to the scheme adopting the pound sterling as the unit of money, we will, for the sake of clearness, derive our illustrations at first from the system as founded upon that basis.

With the pound sterling as the unit, or integer, it is proposed to have the following subdivisions.

£1=10 florins.
1 florin=10 cents.
1 cent=10 mils.
or £1=10 flor.=100 cents=1000 mils.

Now, for the practical advantages which this plan affords. In the first place there is, according to this system, a simplicity and uniformity of division which involves no strain upon the child's memory. This applies still more forcibly to the Tables of Weights and Measures, and all calculations founded upon them, as will be seen when we come to that part of our subject.

In the second place, it would be attended with considerable saving of time and manual labour, even in the mechanical operation of setting down sums of money. Thus, instead of writing in full £18. 8*s.* 9¾*d.*, we should have merely to set down figures consecutively, thus: £18.893. The figure immediately succeeding the integer (*i. e.* the figure standing for shillings) will stand for florins, the next following for *cents*, the next following that for *mils*. We should read them off, as 18 pounds, 8 fl. 9 cents and 3 mils.

In the third place, as the successive stages in this Decimal Coinage correspond in relative value to the successive figures according to the Arabic notation, it is clear that the operation of *Reduction*, as in finding "In so many pounds how many farthings; or in so many farthings how many pounds?" instead of requiring successive multiplications or divisions by 4, and 12, and 20, is actually and visibly done in the figures as they stand. We will take the example given above: If we are required to ascertain how many *mils* there are in £18. 8 fl. 9 cents, 3 mils, all we have to do is to write the sum down in the natural way, thus, £18.893, and we see that it is eighteen thousand eight hundred and ninety-three. When in 18,893 mils we desire to know how many florins, all we have to do is to strike off the *two* last figures, which gives 188 florins and 93 mils, or 9 cents and 3 mils; and to find how many pounds, to strike off three figures. In fact, as we have said before, by this system we have the operations of Reduction already done when we have the figures set down.

PART II.

Having shown how, according to this system, all the operations of Reduction in arithmetic are already done, when the amount to be operated upon is set down, it will be readily seen how greatly all other arithmetical calculations are facilitated. Thus, what is now known as Compound Addition becomes Simple Addition. There is no careful adding up of farthings; dividing by 4; setting down the remainder; carrying on the pence to the next column; then repeating the same process by 12, and again the same by 20, until we come to the casting up of the pounds: but from the beginning to the end, the work is as easy and as simple as if the sums to be added consisted of one denomination only. It is hardly necessary to observe that a great saving of time and mental labour is hereby effected in casting up accounts, and the liability to error greatly lessened.

The same applies in a striking manner to the operations of Compound Multiplication. Suppose we have to calculate the cost of 26 cwts. of sugar, at £3. 16*s*. 7¼*d*. per cwt. According to our present system it would be done thus:—

$$\begin{array}{rrl}
\pounds 3 & 16 & 7\frac{1}{4} \\
 & & 5 \times 5 + 1 = 26 \\
\hline
19 & 3 & 0\frac{1}{4} \\
 & & 5 \\
\hline
95 & 15 & 1\frac{1}{4} \\
3 & 16 & 7\frac{1}{4} \\
\hline
\pounds 99 & 11 & 8\frac{1}{2}
\end{array}$$

an operation involving 8 distinct acts of division, besides the addition and multiplication necessarily required in the calculation.

When our coinage is decimalized, the operation becomes one of simple multiplication:—thus

$$\begin{array}{r}
\pounds 3.671 \\
26 \\
\hline
22026 \\
7342 \\
\hline
\pounds 95.446
\end{array}$$

giving £95. 4 fl. 4 cents and 6 mils as the result. As £3. 6 fl. and 71 mils in the one case is less than £3. 16*s*. 7¼*d*. in the other, the result, of course, is less. Our illustration applies only to the principle.

The same applies to Compound Division. What is the actual operation according to the present system, even in so apparently simple a calculation as dividing £3. 14*s*. 3¾*d*. by 4? Let us see. In the first place, the £3 are reduced to 60*s*., and the 14*s*. are added, making 74*s*. This amount is divided by 4, giving 18*s*., and 2*s*. over as the result. The 2*s*. are reduced to 24 pence, and added to 3*d*. give 27*d*., which is divided by 4, giving 6*d*. and 3*d*. over as the result. The 3*d*. are reduced to farthings and added to the ¾, making 15 farthings, which again divided by 4, gives ¾ and 3 remainder.

Contrast this cumbrous and tedious process with the following, according to the beautifully simple principles of the Decimal System:—

Divide £3.873 by 4:

$$\begin{array}{r}
4)\pounds 3.873 \\
\hline
968\ \ 1
\end{array}$$

giving 9 fl. 6 cents and 8 mils as the result by one simple operation.

Again, take such a question as the following: How much in the pound is £43. 7*s*. 4¾*d*. per cent.? The common operation, as done according to the present system, is this:—

```
As   £100   :   £43  7  4¾    :    £1
                 20
               ----
                867
                 12
              -----
              10408
                  4
           --------
  1 | 00)416 | 35
           --------
       4)416
           --------
      12)104
           --------
            8s. 8d.
```

This calculation, according to the Decimal System, is done by merely striking off the two last figures; that is, by dividing by 100. Thus, how much in the pound is £43.744, per cent.? Strike off 44, and we have .437, which gives 4 fl. 3 cents and 7 mils, as the result required.

If the saving of time and labour secured by this system as applied to Money is great, how much greater must it be when applied to Weights and Measures as well! To this part of the subject our next paper will be devoted.

PART III.

Do our readers know their Tables? We mean no impertinent reflection on the extent and accuracy of their general information, but, judging from our own experience, we strongly suspect that a large proportion even of our well-educated classes, have forgotten, even if they ever mastered, the perplexing incongruities of our Tables of Weights and Measures. Though as a tolerably good boy at school, with great labour, but some impatience, we did manage to attain to a fair amount of quickness in the management of them, yet now we constantly find an appeal to the *printed* Tables absolutely necessary. There is such an utter absence of uniformity in the arrangement, as to render the recollection of them exceedingly difficult, and the use of them in arithmetical calculations exceedingly perplexing and toilsome.

At present, in this country, we have no fewer than *three* systems of Measures of Weight, and three of Measures of Capacity, and, moreover, not one of these founded upon any principle. In the Avoirdupois Weight we have 16 drams to an ounce; in the Apothecaries Weight we have only 8 drams. The ounce Troy is *heavier* than the ounce Avoirdupois, but the pound Avoirdupois is heavier than the pound Troy, the one containing 16 oz., the other only 12. The same incongruity exists in the Tables of Measures of Capacity. Thus in Wine Measure 63 gallons go to a hogshead; while the Beer Measure gives 54, and the Ale Measure only 48. Why not apply the same measure of weight to all goods alike, and the same measure of capacity to all liquids and to dry goods as well?

Our Tables themselves are also faulty from a want of systematic division, which makes them burdensome to the memory, and perplexing in all calculations in which Weights and Measures are concerned. Apply the Decimal System of arrangement to our weights, and how simple the Tables become, and how much easier all arithmetical computation! Even though we retained the pound, our present unit of weight, the saving of time and labour in the school and in the counting-house, would be very considerable. Suppose our *ton* contained 1000 lbs., or 10 cwts., every *cwt.* contained 10 *tenths*, and every *tenth* 10 lbs., and so on, how greatly would our calculations be simplified! We confess that we ourselves have a strong feeling in favour of the Metrical System adopted in France and the neighbouring countries. To the explanation and illustration of this we propose to devote our next paper; but at present for the sake of illustration we will adopt this arrangement, and give as an instance of the commercial advantage of the Decimal System, the following calculation, which, as our readers must see, is a very ordinary case in mercantile transactions.

483 tons, 5 cwt. 97 lbs. of cast-iron columns at £4. 2 fl. 75 mils per ton?

According to the Decimal System, the following would be the process:

```
      lbs.           lbs.            £.  fl.  f.
  As 1000    :     483597    :  :    4   2   75
                     4275
                  -------
                  2417985
                 3385179
                 967194
               1934388
             ----------
          1000)2067377(175
             ----------
```

2067377 or 2067 pounds, 3 florins, 77 farthings.

Now take the same Rule of Three sum, on the old system: 215 tons, 17 cwt. 3 qrs. and 9 lbs. of cast-iron columns, at £9. 11*s.* 6¼*d.* per ton.

```
   Ton.             Tons.  cwts.  qrs.  lbs.        £.   s.   d.
As 1       :        215     17     3     9   :  :    9   11   6¼
  20                 20                             20
 ----               ----                           ----
  20               4317                            191
   4                  4                             12
 ----             -----                           -----
  80              17271                           2298
  28                 28                              4
 ----             -----                           -----
2240 lbs.        138177                           9193 farthings.
                 34542
                 ------
                 483597 lbs.
                   9193
               --------
                1450791
               4352373
               483597
             4352373
             -----------
     224,0 ) 444570722,1 ( 1984690 farthings.
             224
             ----
             2205
             2016
              ----
              1897                        4)1984690 farthings.
              1792                          --------
               ----                      12)496172½
               1050                         ---------
                896                      2,0)4134,7s. 8½d.
                ----                         ----------
                1547                 Answer  £2067. 7s. 8½d.*
                1344
                 ----
                 2032
                 2016
                 -----
                  1621
```

Having proved (as we presume our readers will admit) that the Decimal System is incomparably superior to the complicated and incongruous arrangement now in use in this country, our next inquiry will be, What is the basis on which the system should be founded? How shall we determine the standard unit of Measure? But of this, gentle reader, in our next. Till then, farewell.

---

* These two sums are taken from *Yates on the French (or Metrical) System*, pp. 34, 35.

PART IV.

Our readers, we conceive, will require no further proof of the great advantages of the Decimal System than is afforded by a comparison of the two arithmetical operations given in our last paper. The result required is the same, but how simple and easy the process in the one,—how lengthy and complicated in the other! Yet this is only one out of very many illustrations which might be adduced, of calculations which constantly occur in mercantile transactions, and naturally suggests what a great saving of time and mental labour would result from the adoption of a Decimal System of Measures, Weights, and Money.

Presuming that our readers are satisfied that it is incumbent upon us as a nation to adopt a Decimal System, we proceed to address ourselves to the question, What should be the *basis* or the standard unit? Here the advocates of Decimal computation are divided, so far as money is concerned; some being in favour of the pound sterling; others of a new coin of the value of 10 pence; and a third party wishing for the franc. In each case, it is proposed that the divisions and subdivisions of money of account should be decimal; that is, each money of account shall be 10 times in value the next lower. The pound will be equal to 10 florins; the florin 10 cents; the cent 10 mils or farthings. On the other hand, the franc will equal 10 new pence; the new penny 10 cents, or 1 franc = 100 cents. These will be the money of account, that is, the only coins entered in the day-book or the ledger. Other coins will be issued for convenience, just in the same way as we now have our 3*d.*, 4*d.*, 6*d.* pieces, our crowns and half-crowns, which are coins, but not money of account.

If the £ unit be adopted, it will be necessary to issue a coin that shall be of the value of a *tenth* of a florin, or a little less than 2½*d.*; and likewise one that shall be of the value of a tenth of 2½*d.*, or a little less than our present farthing. These will be the money of account. Intermediate coins will be issued to suit the convenience of ordinary commercial transactions. The pound and the shilling (as half-florin) will be retained, and serve as a common ground for comparison between the old and the new systems.

On the other hand, if either the franc or the 10*d.* be adopted as the basis, the present shilling must be abandoned, and likewise the pound sterling, but the *penny* will be retained, as money of account, and a new coin issued of the value of a *tenth* of a penny, or nearly so. The four-penny and the three-penny pieces may be retained as coins, and likewise the half-crown and crown, which would be respectively three francs and six francs; but then, as now, they would not be money of account. The advocates of this plan lay great stress on the importance, to the masses of the people especially, of retaining the penny, and likewise of providing a coin of lower value than our present farthing.* They likewise, not without reason, allege that it would be an incalculable advantage to adopt in this country such a system as would identify our Money, Weights, and Measures, with those which are now in use in France and other nations on the continent, where the Decimal System is applied. The *franc* as the basis would render the system *international,* and would go far towards establishing a universal language of Commerce, uniting more closely all the nations of the world in the bonds of social and commercial intercourse.

The advocates of the Pound unit have much to say in favour of their scheme; but, while they have declared that a Decimal arrangement of the Coinage would not be complete without a Decimal arrangement of Weights and Measures, we are not aware that they have yet propounded any scheme in accordance with which this object should be accomplished. Of this we feel assured, that whenever such a change shall take place in this country, scientific and commercial men will not be satisfied with anything less perfect than the *Metrical System* now in use in France, founded as it is upon the deductions of science, developed in accordance with the clearest principles, and adapted to the wants of the highest and the capacities of the lowest orders of our artificers and accountants. The *franc* as the monetary unit forms a part of this system, which is in every respect complete; each department being connected with the other by distinct and definite relations, and all dependent upon one and the same linear measure. The same harmony pervades the Tables of Weights and Measures as of Money, and all are so related to each other and to their common basis, that one does not know what most to admire, the exemplification it affords of the triumphs of science as applied to social economy, or the marvellous simplicity which renders the system alike suited to the minute researches of the chemical student and to the calculations of the humblest mechanic.

The French Metrical System rests upon the standard unit of *length* as its basis. This unit, called a *metre,* from the Greek word *μετρον*, a measure, is the ten-millionth part of the distance on the Meridian line from the Equator to the Pole. Most of our readers are aware that by means of astronomical observation this quantity may be ascertained with sufficient accuracy. The metre, as unit of length, being fixed, the *litre,* as unit of *capacity,* is derived from it in this way: A cube is described on the 10th part of the metre, called a *decimetre,* and the contents of this cube, whether in grain or liquids, becomes the standard measure of capacity. The unit measure of *weight* is determined in the same way; a cubic *centimetre, i. e.* the hundredth part of a metre, is supposed to be filled with water of a fixed temperature, and the weight of this quantity of water is the *gramme.* Again, the French coinage is based upon the unit of weight, the silver franc being equal to 5 grammes; and the other coins bearing proportionate relations in regard to weight.

The following Tables and Examples may assist the reader in obtaining a further knowledge of the Metrical System and of its advantages.

UNITS OF THE METRICAL SYSTEM.

Metre....	Unit of Length.	
Are......	Unit of Surface	= 1 Square Decametre.
Stere	Unit of Solidity	= 1 Cubic Metre.
Litre	Unit of Capacity	= 1 Cubic Decimetre.
Gramme..	Unit of Weight	= 1 Cubic Centimetre of water.
Franc....	Unit of Money	= 5 Grammes of standard silver.

---

* The following statements will illustrate this argument:

List of a few of the numerous articles frequently purchased by the poor, in paying for which a coin less than a farthing is required.

	Exact cost.
½ oz. of tea, at 3*s.* 8*d.* per lb.	1⅜*d.*
¼ lb. of sugar, at 5½*d.* ,,	1⅜
2 oz. of butter, at 1*s.* 1*d.* ,,	1⅝
1 oz. of coffee, at 1*s.* 2*d.* ,,	⅞
¼ lb. of soap, at 5½*d.* ,,	1⅜
A candle, at 5½*d.* ,,	11/16
¼ lb. of rice, at 3½*d.* ,,	⅞

Also most of the fractional parts of
A yard of ribbon at 5½*d.* 6½*d.* 7½*d.* &c.
,, calico at 3½*d.* 4½*d.* 5½*d.* &c.
And many other articles of drapery.

A sufficient proof of the great importance of small coins to the masses is afforded by the use of them in other countries. Great Britain is probably the only country in which they are not supplied. The Government provides them in every other country, and they are used in immense quantities. Millions of centimes circulate every day in France, Belgium, Switzerland, and Italy. A fresh supply is constantly required. In the month of March, 1855, 31 millions of centimes were issued from the Mint at Marseilles.

LINEAR MEASURES.

Myriametre	10.000.
Kilometre..............	1.000.
Hectometre	100.
Decametre	10.
METRE	1.
Decimetre	.1
Centimetre	.01
Millimetre	.001

WEIGHTS WITH THEIR RELATION TO THE LINEAR MEASURES.

Ton	1.000.000.	1 Cubic Metre
Sack (of coals)	100.000.	
Cwt. or Centner	50.000.	
Myriagramme	10.000.	
Kilogramme	1.000.	= 1 Cubic Decimetre
Pound	500.	
Hectogramme	100.	
Decagramme........	10.	
GRAMME	1.	= 1 Cubic Centimetre
Decigramme........	.1	
Centigramme	.01	
Milligramme	.001	= 1 Cubic Millimetre

of pure water.

EXAMPLES.

Addition of Francs:

```
  f.  c.
  15.24
 430.40
  29.14
 316.20
    .06
 ------
 791.04
```

Multiplication of Metres:

```
    m.  c.
  439.31  at 3.57 francs.
    3.57
 -------
  307517
 219655
131793
 -------
1568.3367  or 1568 francs, 34 centimes nearly.
```

The following is a sum in Compound Addition. It shews four quantities of goods, denoted by their weight and added together according to the English rule. Underneath are the same four quantities very nearly, expressed also in very nearly the same figures and the same number of denominations, but reckoned by the Metrical Ton and its subdivisions, instead of

the English Ton and its subdivisions. The reader will perceive the difference between the two methods, both as regards facility and quickness, and in respect to security against error.

Tons.	cwts.	qrs.	lbs.	oz.	drs.
97	15	2	22	15	14
48	14	1	26	14	15
25	18	3	20	12	12
95	16	2	24	15	10
268	5	3	11	11	3

```
2,0)6,5       4)11        28)95(3     16)59(3     16)51(3
                             84          48          48
 3  5 cwt.     2  3 qrs.    ---         ---         ---
                             11 lbs.     11 oz.       3 drs.
```

ADDITION OF METRICAL TONS WITH THE DECIMAL SUBDIVISIONS.

Tons.	Kilos.	Grammes.
97	893	254
48	774	645
25	938	022
95	629	458
268	235	379

The preceding system of Measures and Weights is so simple, that any child may learn it in a week, and, having been once learnt, it cannot be forgotten, because it is used on all occasions and for all manner of purposes.*

We think our readers will admit that no arrangement can possibly exceed in simplicity and clearness the system of which we have given this brief outline; and when we further remember that in each department the unit is multiplied, divided, and subdivided by 10, and that all the advantages, which we have seen to attach to Decimal computation, belong to the Metrical System as a whole and in all its parts, it is clearly a question worthy of consideration in this country, whether, when our present incongruous and complicated method is abandoned, it would not be wise to adopt that system. It is founded upon principles which belong to all nations, and in reality is French in no other sense than that the French nation first had the wisdom to adopt it. The advantages of a system which shall be international are obvious, both as regards science and commerce. It would greatly facilitate social intercourse among the various nations of the globe, and tend to unite them in the bonds of universal peace and permanent good-will. These are objects worthy of consideration, and no doubt will have due weight, when the question comes to be decided. In the mean while it is of great consequence that the public should become familiarized with the Decimal System. That they need not be alarmed at the change, after the statements and explanations given in our previous pages, we think our readers will readily admit. Instead of being more difficult, the system is infinitely more simple and easy than that which is now in use. Its adoption will secure greater accuracy in all our accounts, and a great saving of time in keeping them. It will likewise relieve the schoolmaster and his pupil of a vast amount of needless labour, and bring arithmetical computations within the reach and capacity of a large class of persons, who are now utterly unable to master the difficulties which meet them at the threshold of arithmetical calculations.

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* Very excellent articles on the Metrical System, with further illustrations, will be found in *Rees's Cyclopedia*—see DEGREE, MEASURES, STANDARD, WEIGHTS; and in the *Penny Cyclopedia*—see WEIGHTS AND MEASURES, p. 203. Mr. Woolhouse, an author exceedingly conversant with the subject, observes, "The advantage of such a system, when once established, is so great, that all who are capable of appreciating its merits look forward with great interest to the introduction of a similar one into Great Britain."—*The Measures, Weights, and Moneys of all Nations*, Lon. 1856, p. 22.

We have much more that we intended to have said on this subject, but we forbear, lest we tire our readers with details, which they will be able to investigate more fully by themselves. In conclusion, we take the liberty to express our hope, that the kind readers who have accompanied us thus far, will do what they can to extend the knowledge of the principles on which this system is founded; and when the subject is brought before the Legislature of this country, that they will exert all their influence to obtain for themselves, and their children, and their children's children, the great and incalculable benefit of a DECIMAL SYSTEM OF MEASURES, WEIGHTS, AND MONEY.

C. Green, Printer, Hackney.

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